

# **COMPATIBILITY DETERMINATION**

**USE:** Research and Studies Conducted by non-USFWS Staff

**REFUGE NAME:** Eastern Shore of Virginia National Wildlife Refuge

**DATE ESTABLISHED:** August, 1984

## **ESTABLISHING AND ACQUISITION AUTHORITY(IES):**

- 1) Transfer of Certain Real Property for Wildlife Conservation Purposes Act {16 U.S.C. 667b-667d}
- 2) Refuge Recreation Act {16 U.S.C. 460K-1, K-2}
- 3) Migratory Bird Conservation Act {16 U.S.C. 715-715d, 715e, 715f-715r}

## **REFUGE PURPOSE(S):**

“... particular value in carrying out the national migratory bird management program.”  
16 U.S.C. 667b-667d (An Act Authorizing the Transfer of Certain Real Property for Wildlife, or Other Purposes).

“... suitable for- (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460K-1 (Refuge Recreation Act)

“..... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act)

## **MISSION OF THE NATIONAL WILDLIFE REFUGE SYSTEM:**

The mission of the National Wildlife Refuge System (Refuge System) is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

## **DESCRIPTION OF USE:**

### **(a) What is the use? Is the use a priority public use?**

The use is research conducted by agencies, organizations, and other research entities, other than U.S. Fish and Wildlife Service (USFWS) staff on the refuge. Research is the planned, organized, and systematic gathering of data to discover or verify facts.

This determination covers low or no-impact research projects; namely, those projects with methods that only have a minimal potential to adversely impact cultural resources, water, soils, or native wildlife and plants. This is not an all-inclusive list, but examples of the types of research that may be allowed include: mist-netting for banding or tagging birds, point count surveys, fish and amphibian tagging, electrofishing, radio-telemetry tracking, use of cameras and

recorders, use of live or other passive traps, or non-destructive searches of nests, dens or burrows.

Research activities allowed under this determination must not result in long-term, negative alterations to wildlife behavior (e.g. result in wildlife leaving previously occupied areas for long periods; modifying their habitat use, or, causing nest or young abandonment). No project may degrade wildlife habitat, including vegetation, soils, and water. Research associated activities that would generally not be allowed include, but are not limited to, those that would result in soil compaction or erosion, degrade water quality, remove or destroy vegetation, involve off-road vehicle use, collect and remove animals or whole native plants, cause public health or safety concerns, or result in conflicts with other compatible refuge uses.

Refuge support of research directly related to refuge goals and objectives may take the form of funding, in-kind services such as housing or use of other facilities, vehicles, boats, or equipment, direct staff assistance with the project in the form of data collection, provision of historical records, conducting of management treatments, or other assistance as appropriate.

While we will actively promote research projects that directly relate to knowledge and management of refuge purposes, we also recognize that Eastern Shore of Virginia National Wildlife Refuge (NWR) lies in a unique geographic location and it offers the opportunity for other agencies to fulfill their missions. Although these agencies' interests are not always closely aligned with the refuge's purposes or the Refuge System mission, they may have an interest in conducting nationally important research on the refuge. Such proposals will be considered by the refuge manager even if they do not contribute directly to refuge needs. These proposals will still be subject to all the same stipulations as others, such as the requirement that all research have low or no-impacts to refuge resources and that there be no conflicts with other compatible refuge uses.

Research conducted by non-USFWS staff is not a priority public use of the National Wildlife Refuge System (Refuge System) under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee) and the Refuge System Improvement Act of 1997 (Public Law 105-57).

**(c) Where would the use be conducted?**

The Eastern Shore of Virginia NWR, currently 1,340 acres in size, is located in Northampton County, Virginia. The refuge is comprised of 1,172 mainland acres located on the southern mainland tip of the Delmarva Peninsula and two islands - Skidmore Island (108 acres) and a portion of Raccoon Island (approximately 60 acres). All lands are owned in fee title.

Research locations will vary depending on the individual research project that is proposed. A specific research project is usually limited to a particular location, habitat type, plant, or wildlife species. On occasion, research projects will encompass an assemblage of habitat types, plants, or wildlife. The research location will be limited to those areas of the refuge that are absolutely necessary to conduct the research project. The refuge may limit areas available to research as necessary to ensure the protection of Federal trust resources, or to reduce conflict with other

compatible refuge uses. The methods and routes of access to study locations will be identified by refuge staff.

**(d) When would the use be conducted?**

The timing of the research may depend entirely on the individual research project that is being conducted. Scientific research will be allowed to occur on the refuge throughout the year. An individual research project might be short-term in design, requiring only one or two visits over the course of a few days, or be a multiple year study that may require regular visits to the study site. The timing of each individual research project will be limited to the minimum required to complete the project. If a research project occurs during the refuge hunting season, special precautions will be required and enforced to ensure safety. The refuge manager would approve the timing (e.g., project length, seasonality, time of day) of the research prior to the start of the project to minimize impacts to wildlife and habitats, ensure safety, and reduce conflicts with other compatible refuge uses.

**(e) How would the use be conducted?**

The objectives, methods, and approach of each research project will be carefully scrutinized by the refuge manager before it will be allowed on the refuge. Only low or no-impact research activities, such as those listed under section (a) above, are covered under this determination.

Research projects must have a USFWS-approved study plan and protocol. A detailed research proposal that follows the refuge's study proposal guidelines (see attachment 1) is required from parties interested in conducting research on the refuge. Each research proposal request will be considered, and if determined appropriate and compatible, will be issued a special use permit (SUP) by the refuge manager that includes the stipulations in this determination. The refuge manager will use sound professional judgment and ensure that the request will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purpose(s) of the refuge. Before initiating a research project that involves federally listed endangered or threatened species, an interagency Section 7 consultation shall be completed.

If approved, multi-year research projects will be reviewed annually to ensure that they are meeting their intended design purposes, that reporting and communicating with refuge staff is occurring, and that projects continue to be consistent with the mission of the Refuge System and purposes for which the refuge was established.

If the refuge manager decides to deny, modify, or halt a specific research project, the refuge manager will explain the rationale and conclusions supporting their decision in writing. The denial or modification to an existing study will generally be based on evidence that the details of a particular research project may:

- Negatively impact water, soils, native fish, wildlife, and habitats or cultural, archaeological, or historical resources beyond the low or no-impact standard.
- Detract from fulfilling the refuge's purposes or conflict with refuge goals and objectives.
- Raise public health or safety concerns.
- Conflict with other compatible refuge uses.
- Not be manageable within the refuge's available staff or budget time.

- Deviate from the approved study proposal such that impacts to refuge resources are more severe or extensive than originally anticipated.

This determination makes clear that research should not materially interfere with or detract from the refuge's purposes or the Refuge System mission.

**(f) Why is this use being proposed?**

Scientific research, including inventory and monitoring projects, are an integral part of refuge management. Quality research provides critical information for establishing baseline information on refuge resources and evaluating management effects on wildlife and habitat. Research findings can inform, strengthen, and improve future refuge management decisions, as well as inform management decisions on other ownerships with Federal trust resources in the Delmarva Peninsula and possibly elsewhere in the Northeast Region.

Most research projects on the Eastern Shore of Virginia NWR focus on avian migration or climate change. For example, researchers from the Virginia Department of Game and Inland Fisheries have been studying American black ducks on the refuge for the past 5 years in a joint project with USFWS and the Black Duck Joint Venture. Researchers from the Center for Conservation Biology (CCB), affiliated with the College of William and Mary, have been mist netting salt marsh sparrows during the winter for 4 years in order to study winter distribution of these birds. Boston University, George Mason University and USGS have been studying marsh hydrology, storm surge effects, and storm surges themselves to learn more about climate change and how it affects the environment. Researchers from the Coastal Virginia Wildlife Observatory (CVWO), a non-governmental organization, have conducted butterfly and skipper surveys since 1995. Beginning in 1998, researchers also began tagging migrating monarch butterflies to learn about the migration ecology of these insects. Other subjects ranging from Fowler's toads to migrating bats to praying mantis to ticks and Lyme disease have been studied on the refuge or the refuge has been used as a part of a larger project involving these areas.

The refuge manager would particularly encourage research supporting approved refuge goals and objectives that clearly improves land management decisions related to Federal trust resources, helps evaluate or demonstrate state-of-the art techniques, and/or helps address or adapt to changing climate and land use impacts. Research conducted by other federal agencies that is not refuge resource based may be allowed for instances of national significance.

**AVAILABILITY OF RESOURCES:**

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. The bulk of the cost for research is incurred in staff time to review research proposals, coordinate with researchers, and write SUPs. In some cases, a research project may only require 1 day of staff time to write a SUP. In other cases, a research project may take many weeks, as the refuge staff must coordinate with students and advisors and accompany researchers' onsite visits. These responsibilities are accounted for in budget and staffing plans. We estimate the annual costs associated with the administration of this use:

*Review proposals, coordinate with researchers*

(Refuge Biologist):	\$7,000
<i>Review proposals, issue SUPs</i>	
General coordination (Refuge Manager):	\$3,000
<i>Vehicle, equipment, housing maintenance</i>	
(Maintenance Worker):	\$3,000
Total Annual Cost of Program:	\$13,000

We do not anticipate charging fees.

### **ANTICIPATED IMPACTS OF THE USE:**

Disturbance to wildlife, vegetation, water, soils, or cultural resources could occur while researchers are accessing study sites on vehicles or by foot, or while they are engaged in their project. The presence of researchers could also indirectly disturb wildlife. Potential impacts include:

- Trampling, damage, and killing of vegetation from walking off-trail (Kuss 1986, Roovers et al. 2004, Hammitt and Cole 1998).
- Soil compaction, soil erosion, and changes in hydrology from hiking on and off trail (Kuss 1986, Roovers et al. 2004).
- Disturbance to wildlife that causes shifts in habitat use, abandonment of habitat, increased energy demands on affected wildlife, changes in nesting and reproductive success, and singing behavior (Knight and Cole 1991, Miller et al. 1998, Shulz and Stock 1993, Gill et al. 1996, Arrese 1987, Gill et al. 2001).

Overall, we expect that these impacts would be negligible because of the low number of researchers and because, under this determination, only low or no-impact projects would be allowed. As indicated under (a) above, low impact projects are those that would only minimally impact cultural resources, water, soils, or native wildlife and plants, and would not result in long-term, negative alterations to species' behavior, or their habitat, including vegetation, soils, and water. Research would only be conducted in approved locations and at approved times of day and season to minimize impacts to sensitive habitats and wildlife.

Animals may be temporarily disturbed during direct or remote observation, telemetry, capture (e.g., mist-netting), or banding. In rare cases, direct injury or mortality could result as an unintended result of research activities. Mist-netting and banding, which are common research methods, can cause stress, especially when birds are captured, banded, and weighed. In very rare cases, birds have been injured or killed during mist netting, or killed when predators reach the netted birds before researchers (Spotswood et al. 2012). To minimize the potential for injuries, researchers should be properly trained (Fair et al. 2010, Spotswood et al. 2012).

The U.S. Department of Agriculture's Animal Welfare Information Center maintains a website with resources to help minimize stress, injury, and mortality of wildlife in field studies at: <https://awic.nal.usda.gov/research-animals/wildlife-field-studies>.

Researchers may also inadvertently damage plants (e.g. via trampling or equipment use) during the research project. To minimize impacts, the SUP will outline how researchers are allowed to access their study sites and use equipment to minimize the potential for impacts to refuge vegetation, soils, and water. We would not allow the collection and removal, or permanent damage, of any native plants under this determination.

Overall, allowing well-designed, properly reviewed, low or no-impact research to be conducted by non-USFWS personnel is likely to have very little negative impact on cultural resources, water, soils, or wildlife populations and habitats. We anticipate research will only have negligible to minor impacts to refuge wildlife and habitats because it will only be carried out after the refuge approves a detailed project proposal and issues a SUP including the stipulations in this determination to ensure compatibility. These stipulations are designed to help ensure each project minimizes impacts to refuge cultural resources, wildlife, vegetation, soils, and water.

We also anticipate only minimal impacts because USFWS staff will supervise this activity, and it will be conducted in accordance with refuge regulations. In the event of persistent disturbance to refuge resources, the activity will be further restricted or discontinued. If the research project is conducted with professionalism and integrity, potential temporary or minor adverse impacts are likely to be outweighed by the knowledge contributed to our understanding of refuge resources and our management effects on those resources, as well as the opportunity to inform, strengthen, and improve future refuge management decisions.

In the 10 years between the original CD and CD re-evaluation, USFWS staff has seen little to no adverse effects on resources resulting from research conducted on the refuge. Properly conducted research appears to have no lasting or substantial impact on refuge resources.

#### **PUBLIC REVIEW AND COMMENT:**

This compatibility determination is a re-evaluation of the compatibility determination completed as part of the draft Eastern Shore of Virginia NWR CCP/EIS. Public notification and review was done at that time and included a notice of availability published in the Federal Register, a 45-day comment period for the draft CCP/EIS during which public meetings were held, a 30-day review period for the final CCP/EIS, and the record of decision published in the Federal Register. There were no substantial changes made during the re-evaluation process for this compatibility determination. Subsequently, the refuge posted the CD re-evaluation on its website for a 14-day public review and comment period. Local newspaper public notification, directing the public to the website, was given.

#### **DETERMINATION (CHECK BELOW):**

☐ Use is not compatible

☒ Use is compatible, with the following stipulations

## **STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

- Only low or no-impact projects are covered under this determination. Low impact projects, as indicated under (a) above, are those that would only have a minimal potential to impact cultural resources, water, soils, or native wildlife and plants. No project should result in long-term negative alterations to wildlife behavior (e.g. result in wildlife leaving previously occupied areas for a long term; modifying their habitat use within their range; or, causing nest or young abandonment). No project should degrade wildlife habitat, including vegetation, soils, and water. Nest, dens, and burrows must not be harmed. No research activities should result in soil compaction or erosion, degrade water quality, remove or destroy vegetation, involve off-road vehicle use, or result in collection and removal of animals or whole native plants.
- Research would only be conducted in USFWS-approved locations, using approved modes of access, and conducted only after the timing, season, duration, numbers of researchers, and areas open and closed is approved. Sensitive wildlife habitat areas will be avoided unless sufficient protection, approved by the USFWS, is implemented to limit the area and/or resources potentially impacted by the proposed research.
- If a research project occurs during the refuge hunting season, special precautions will be required and enforced to ensure public health and safety, and otherwise reduce conflicts with other compatible refuge uses.
- The USFWS will require modifications to research activities, including temporarily closing areas, or changing methods, when warranted, to avoid harm to sensitive wildlife and habitat when unforeseen impacts arise.
- All researchers will be required to submit a detailed research proposal following the refuge's study proposal guidelines (attachment 1) and USFWS Policy (FWS Refuge Manual Chapter 4 Section 6). The refuge must be given at least 45 days to review proposals before initiation of research. Proposals will include obligations for regular progress reports and a final summary document including all findings.
- The criteria for evaluating a research proposal, outlined in the "Description of Use" section (a) above, will be used when determining whether a proposed study will be approved on the refuge. Projects could be denied if they:
  - Will adversely affect native fish, wildlife, and habitats or cultural, archaeological, or historical resources beyond the low or no-impact standard.
  - Materially interfere with or detract from fulfilling the refuge's purposes or conflicts with refuge goals and objectives.
  - Cause public health or safety concerns.
  - Conflict with other compatible refuge uses.
  - Are not manageable within the refuge's available staff or budget time.

- Proposals will be prioritized and approved based on need, benefit to refuge resources, and the level of refuge funding required. USFWS experts, State agencies, or academic experts may be asked to review and comment on proposals.
- If proposal is approved, a SUP will be issued. The SUP will contain this determination's stipulations as well as project-specific terms and conditions that the researcher(s) must follow relative to the activities planned (e.g., location, duration, seasonality, etc.).
- Researchers must comply with all state and Federal laws and follow all refuge rules and regulations. All necessary State and Federal permits must be obtained before starting research on the refuge (e.g., permits for capturing and banding birds). Any research involving or affecting federally listed species may require Section 7 consultation under the Endangered Species Act. Any research involving ground disturbance may require historic preservation consultation with the Regional Historic Preservation Officer and/or State Historic Preservation Officer.
- Researchers will mark any survey routes, plots, and points in as visually unobtrusive a manner as practical. No permanent markers or infrastructure can be left on the refuge.
- Researchers will use every precaution and not conduct activities that would cause damage to refuge property or present hazards or significant annoyances to other refuge visitors. Any damage should be reported immediately to the refuge manager.
- Researchers must not litter, or start or use open fires on refuge lands.
- Prior to initiating the project, all researchers handling wildlife must be properly trained to minimize the potential for harm to individual animals. In addition, a review of the U.S. Department of Agriculture's Animal Welfare Information Center website must be documented by the researcher with identification of practices that will be followed to help further minimize stress, injury, and mortality of wildlife. The website is reached at: <https://awic.nal.usda.gov/research-animals/wildlife-field-studies>.
- Researchers may not use any chemicals (e.g., herbicides to treat invasive plants) or hazardous materials without prior written consent of refuge manager (e.g., the type of chemical, timing of use, and rate of application). All activities will be consistent with USFWS policy and covered under an approved refuge Pesticide Use Plan.
- Researchers will be required to take steps to ensure that invasive species and pathogens are not inadvertently introduced or transferred to the refuge and surrounding lands (e.g., cleaning equipment, boots, tool, etc.).
- Refuge staff will monitor research activities for potential impacts to refuge resources. The refuge manager may determine that previously approved research and SUPs be modified or terminated due to observed impacts that are more severe or extensive than originally anticipated. The refuge manager will also have the ability to cancel a SUP if the researcher is not in compliance with the stated conditions.



- Researchers must have the SUP in their possession when engaged in research activities and will present it to refuge officials and State and Federal law enforcement agents upon their request.
- Researchers will submit a final report to the refuge upon completion of their work. For long-term studies, interim progress reports may also be required. The refuge also expects that research findings will be published in peer-reviewed publications. The contribution of the refuge and the USFWS should be acknowledged in any publications. The SUP will identify a schedule for annual progress reports and the submission of a final report or scientific paper.

### **JUSTIFICATION:**

The USFWS encourages quality, scientific research because it provides critical baseline information on Federal trust and other refuge resources and helps evaluate the management effects on those resources. Research results will also help inform, strengthen, and improve future refuge management decisions, as well as inform management decisions on other ownerships in the Delmarva Peninsula and possibly elsewhere in the Northeast Region. Eastern Shore of Virginia NWR provides a unique setting to conduct nationally significant scientific research.

Given the stipulations above, and given that only low or no-impact research projects would be conducted under this determination, we do not anticipate this activity will have greater than minor impact on refuge resources. Impacts, if they occur, would be confined in area, duration, and magnitude, with no long-term consequences predicted. Therefore, research conducted by non-USFWS personnel on Eastern Shore of Virginia NWR will not materially interfere with or detract from the mission of the Refuge System or the purposes for which the refuge was established.

**This activity will not materially interfere with or detract from the mission of the Refuge System or purposes for which the refuge was established.**

#### **Signature:**

Refuge Manager: \_\_\_\_\_  
(Signature) (Date)

#### **Signature:**

Project Leader: \_\_\_\_\_  
(Signature) (Date)

#### **Concurrence:**

Regional Chief: \_\_\_\_\_  
(Signature) (Date)

**Mandatory 10 year re-evaluation date:** \_\_\_\_\_

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